Slobodyansky

Serial Number: 09/657,289A

CRF Processing Date: 3/29/2001
Edited by: _____
Entered by: _____ AJ _____ (STIC staff)

☐ Changed a file from non-ASCII to ASCII

☐ Changed the margins in cases where the sequence text was 'wrapped' down to the next line.

☐ Edited a format error in the Current Application Data section, specifically: _____

☑ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other _____

☐ Added the mandatory heading and subheadings for "Current Application Data".

☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.

☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically: _____

☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were: _____

☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited: _____

☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.

☐ Inserted colons after headings/subheadings. Headings edited included: _____

☐ Deleted extra, invalid, headings used by an applicant, specifically: _____

☐ Deleted: ☐ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/filename at end of file;
☐ page numbers throughout text; ☐ other invalid text, such as _____

☐ Inserted mandatory headings, specifically: _____

☐ Corrected an obvious error in the response, specifically: _____

☐ Edited identifiers where upper case is used but lower case is required, or vice versa.

☐ Corrected an error in the Number of Sequences field, specifically: _____

☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted

☐ Deleted *ending* stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: _____

☑ Other: Seqs 15-19 — moved <223> response up one line
_____

Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.

3/1/95

RAW SEQUENCE LISTING   DATE: 03/29/2001
PATENT APPLICATION: US/09/657,289A   TIME: 12:53:23

Input Set : **A:\Pto.amc**
Output Set: **N:\CRF3\03292001\I657289A.raw**

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 3 <110> APPLICANT: Francis, Kevin P.
 4        Contag, Pamela R.
 5        Joh, Danny J.
 7 <120> TITLE OF INVENTION: LUCIFERASE EXPRESSION CASSETTES AND METHODS OF USE
 9 <130> FILE REFERENCE: 9400-0006
11 <140> CURRENT APPLICATION NUMBER: US/09/657,289A
12 <141> CURRENT FILING DATE: 2000-09-07
14 <160> NUMBER OF SEQ ID NOS: 26
16 <170> SOFTWARE: PatentIn Ver. 2.0
18 <210> SEQ ID NO: 1
19 <211> LENGTH: 6
20 <212> TYPE: DNA
21 <213> ORGANISM: Artificial Sequence
23 <220> FEATURE:
24 <223> OTHER INFORMATION: Description of Artificial Sequence: Gram-positive
25        ribosome binding site
27 <400> SEQUENCE: 1
28 aggagg                                                          6
30 <210> SEQ ID NO: 2
31 <211> LENGTH: 41
32 <212> TYPE: DNA
33 <213> ORGANISM: Artificial Sequence
35 <220> FEATURE:
36 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer XAF3
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39 ccccggatcc tgcagatgaa gcaagaggag gactctctat g            41
41 <210> SEQ ID NO: 3
42 <211> LENGTH: 36
43 <212> TYPE: DNA
44 <213> ORGANISM: Artificial Sequence
46 <220> FEATURE:
47 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer XAR
49 <400> SEQUENCE: 3
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52 <210> SEQ ID NO: 4
53 <211> LENGTH: 39
54 <212> TYPE: DNA
55 <213> ORGANISM: Artificial Sequence
57 <220> FEATURE:
58 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer XBF
60 <400> SEQUENCE: 4
61 gggaattctc gaggaggaga gaaagaaatg aaatttgga               39
63 <210> SEQ ID NO: 5
64 <211> LENGTH: 37
65 <212> TYPE: DNA
66 <213> ORGANISM: Artificial Sequence
68 <220> FEATURE:
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RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/657,289A

DATE: 03/29/2001
TIME: 12:53:23

Input Set : **A:\Pto.amc**
Output Set: **N:\CRF3\03292001\I657289A.raw**

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 79 <220> FEATURE:
 80 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer XCF
 82 <400> SEQUENCE: 6
 83 gggaattctc gaggaggatg gcaaatatga ctaa                       34
 85 <210> SEQ ID NO: 7
 86 <211> LENGTH: 37
 87 <212> TYPE: DNA
 88 <213> ORGANISM: Artificial Sequence
 90 <220> FEATURE:
 91 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer XCR
 93 <400> SEQUENCE: 7
 94 ggcggatccg tcgacttatg ggacaaatac aaggaac                    37
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 97 <211> LENGTH: 37
 98 <212> TYPE: DNA
 99 <213> ORGANISM: Artificial Sequence
101 <220> FEATURE:
102 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer XDF
104 <400> SEQUENCE: 8
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107 <210> SEQ ID NO: 9
108 <211> LENGTH: 37
109 <212> TYPE: DNA
110 <213> ORGANISM: Artificial Sequence
112 <220> FEATURE:
113 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer XDR
115 <400> SEQUENCE: 9
116 ggcggatccg tcgacttaag acagagaaat tgcttga                    37
118 <210> SEQ ID NO: 10
119 <211> LENGTH: 39
120 <212> TYPE: DNA
121 <213> ORGANISM: Artificial Sequence
123 <220> FEATURE:
124 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer XEF
126 <400> SEQUENCE: 10
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129 <210> SEQ ID NO: 11
130 <211> LENGTH: 38
131 <212> TYPE: DNA
132 <213> ORGANISM: Artificial Sequence
134 <220> FEATURE:
135 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer XER
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RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/657,289A

DATE: 03/29/2001
TIME: 12:53:23

Input Set : **A:\Pto.amc**
Output Set: **N:\CRF3\03292001\I657289A.raw**

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142 <212> TYPE: DNA
143 <213> ORGANISM: Artificial Sequence
145 <220> FEATURE:
146 <223> OTHER INFORMATION: Description of Artificial Sequence: LUXA-REV
148 <400> SEQUENCE: 12
149 ccacactcct cagagatgcg                                        20
151 <210> SEQ ID NO: 13
152 <211> LENGTH: 6
153 <212> TYPE: DNA
154 <213> ORGANISM: Artificial Sequence
156 <220> FEATURE:
157 <223> OTHER INFORMATION: Description of Artificial Sequence: BamH I
158       recognition sequence
160 <400> SEQUENCE: 13
161 ggatcc                                                        6
163 <210> SEQ ID NO: 14
164 <211> LENGTH: 37
165 <212> TYPE: DNA
166 <213> ORGANISM: Artificial Sequence
168 <220> FEATURE:
169 <223> OTHER INFORMATION: Description of Artificial Sequence: vector
170       sequence
172 <400> SEQUENCE: 14
173 ggatcctgca gatgaagcaa gaggaggact ctctatg                     37
175 <210> SEQ ID NO: 15
176 <211> LENGTH: 645
177 <212> TYPE: DNA
178 <213> ORGANISM: Artificial Sequence
180 <220> FEATURE:
181 <223> OTHER INFORMATION: Description of Artificial Sequence: pMK4 luxABCDE Sal
183 <400> SEQUENCE: 15
184 atttatctaa agatgagatt aagccaatag aacgtcatta gcaaaataaa ttatattgcg 60
185 tcctacaagc aagttcatgc ttatgtttgt aggggggttat tgtggagaat aaaattattt 120
186 ccaatagaga agggatggta atcattttat agtgaaatat tatgaaattg taataattta 180
187 gatattgtaa aatctaataa gttgtaataa ttttaagggg taattataaa atttgatgat 240
188 acagtatatg atttttttgt aatcataatg tcatcaaaca tcaacctatt atacataata 300
189 aaatcgtata atgatgtagt attcataaat tcggataaaa gaatgttagg aaagttaagc 360
190 aagaggagga ttttaaagtg caaaaaaaag taattgcagc tattattggg acaagcgcga 420
191 ttagcgctgt tgcggcaact caagcaaatg cggctacaac tcacacagta aaaccgggtg 480
192 aatcagtgtg ggcaatttca aataagtatg ggatttcgat tgctaaatta aagtcattaa 540
193 acaatttaac atctaatcta attttcccaa accaagtact aaaagtatct ggctcaagta 600
194 attctacgag taatagtagc cgtccatcaa cgaactcagg tggcg              645
196 <210> SEQ ID NO: 16
197 <211> LENGTH: 671
198 <212> TYPE: DNA
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RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/657,289A

DATE: 03/29/2001
TIME: 12:53:23

Input Set : A:\Pto.amc
Output Set: N:\CRF3\03292001\I657289A.raw

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W--> 202 <221> NAME/KEY: base_polymorphism
         203 <222> LOCATION: 26
         204 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
         205      position
         207 <220> FEATURE:
W--> 208 <221> NAME/KEY: base_polymorphism
         209 <222> LOCATION: 79
         210 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
         211      position
         213 <220> FEATURE:
         214 <223> OTHER INFORMATION: Description of Artificial Sequence: pMK4 luxABCDE Sa2
         216 <400> SEQUENCE: 16
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     218 caaattgata gcaatcccnt tcatcacaga ccatgaacta agcgacttat ttcaaagtga 120
         219 gtatacaaac aattcgttta gatcgcactt atttaaacat accagaatta agaagcgtat 180
         220 taaattagtt gctgaaaaga attatgacca aataagttct attgaagaac aagaatttat 240
         221 tggtgatttg attcaagtca atccaaatgt taaagcgcaa tcaattttag atattacatc 300
         222 ggattctgtt tttcataaaa ctggaattgc gcgtggtcat gtgctgtttg ctcaggcaaa 360
         223 ttcgttatgt gttgcgctaa ttaagcaacc aacagtttta actcatgaga gtagcattca 420
         224 atttattgaa aaagtaaaat taaatgatac ggtaagagca gaagcacgag ttgtaaatca 480
         225 aactgcaaaa cattattacg tcgaagtaaa gtcatatgtt aaacatacat tagttttcaa 540
         226 aggaaatttt aaaatgtttt atgataagcg aggataaaat tatggttaaa ttagcaattg 600
         227 atatgatggg tggcgacaat gcgcctgata tcgtattaga agccgtacaa aaggctgttg 660
         228 aagactttaa a                                                       671
         230 <210> SEQ ID NO: 17
         231 <211> LENGTH: 623
         232 <212> TYPE: DNA
         233 <213> ORGANISM: Artificial Sequence
         235 <220> FEATURE:
W--> 236 <221> NAME/KEY: base_polymorphism
         237 <222> LOCATION: 19
         238 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
         239      position
         241 <220> FEATURE:
W--> 242 <221> NAME/KEY: base_polymorphism
         243 <222> LOCATION: 32
         244 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
         245      position
         247 <220> FEATURE:
W--> 248 <221> NAME/KEY: base_polymorphism
         249 <222> LOCATION: 37
         250 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
         251      position
         253 <220> FEATURE:
W--> 254 <221> NAME/KEY: base_polymorphism
         255 <222> LOCATION: 48
         256 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
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RAW SEQUENCE LISTING   DATE: 03/29/2001
PATENT APPLICATION: US/09/657,289A TIME: 12:53:23

Input Set : **A:\Pto.amc**
Output Set: **N:\CRF3\03292001\I657289A.raw**

```
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        259  <220> FEATURE:
W-->    260  <221> NAME/KEY: base_polymorphism
        261  <222> LOCATION: 85
        262  <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
        263       position
        265  <220> FEATURE:
W-->    266  <221> NAME/KEY: base_polymorphism
        267  <222> LOCATION: 103
        268  <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
        269       position
W-->    270  <220> FEATURE:
W-->    271  <221> NAME/KEY: base_polymorphism
        272  <222> LOCATION: 154
        273  <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
        274       position
W-->    276  <220> FEATURE:
        277  <223> OTHER INFORMATION: Description of Artificial Sequence: pMK4 luxABCDE Sa3
        279  <400> SEQUENCE: 17
W-->    280  gatgggtaag aagaaaatnc ggcatcaggg gncattngcc attcaggntg ggaactgttg 60
        281  gaagggcgtc gggcggcctt ttcgntattc gcagctgcga aangggatgt gctgaaggcg 120
W-->    282  attaagttgg gtaacgccag ggtttcccag tcangcgttg taaacggcgg ccagtgaatt 180
        283  cccgggggatc aagccgttta agtattacga ccagtttata tcattcatgg taaaggacag 240
        284  ggccttcaaa aaggtgtaca acaacatttg aaaagcataa agtgttagtg acttagaggt 300
        285  ggtatgccaa ggaaggtgga tttggcgtta ccgttgcaac actaaaataa attataattt 360
        286  gataaaattaa atagctgcag ttaaaataat gtaaagcaac aagaatacat ttcaaacatg 420
        287  ttatttgaaa taagcataaa aattgagcaa atagaaatac atgaagcatg ttatctgata 480
        288  taatttgaac atcataataa taattaagga ggattggcat ttatggcaat cgtaaaagta 540
        289  acagatgcag attttgattc aaaagtagaa tctggtgtac aactagtaga tttttgggca 600
        290  acatggtgtg gtccatgtaa aat                                      623
        292  <210> SEQ ID NO: 18
        293  <211> LENGTH: 671
        294  <212> TYPE: DNA
        295  <213> ORGANISM: Artificial Sequence
        297  <220> FEATURE:
W-->    298  <221> NAME/KEY: base_polymorphism
        299  <222> LOCATION: 249
        300  <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
        301       position
        303  <220> FEATURE:
        304  <223> OTHER INFORMATION: Description of Artificial Sequence: pMK4 luxABCDE Sa4
        306  <400> SEQUENCE: 18
        307  gatgtatatt cacggggcac atgctgccga aaagcatcac cattaggtgc aatgtcatta 60
        308  ctattgggac ggttttata ttttattgct actcaaggtt ttgtaaatat gcaattaatc 120
        309  ggtgcgatta tctttgtatt aattacaggt cctcttttca agtcatatga ttatgaaagc 180
        310  agcatataat attaaaacgc cttatactaa aaagactaaa gcgatgaaat ttcggaagac 240
W-->    311  ttaaaagcnc aaaattgtag attatataac aaaatcatga atataaatca acaacaaaca 300
        312  gcagtaagat gattccaaat taggaatgat tttactgctg tttttctttg acattgttac 360
        313  ctctttttca atgatttttt ctttgactac agattcgccc tatctacata tatctcttta 420
```

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

```
L:202 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:16
L:208 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:16
L:217 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16
L:218 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16
L:236 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:17
L:242 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:17
L:248 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:17
L:254 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:17
L:260 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:17
L:266 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:17
L:270 M:283 W: Missing Blank Line separator, <220> field identifier
L:271 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:17
L:280 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:281 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:282 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:298 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:18
L:311 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18
L:326 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:19
L:332 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:19
L:338 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:19
L:344 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:19
L:350 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:19
L:356 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:19
L:365 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:366 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:383 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:20
L:389 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:20
L:395 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:20
L:401 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:20
L:407 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:20
L:416 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:417 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:435 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:21
L:441 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:21
L:447 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:21
L:453 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:21
L:463 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21
L:464 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21
L:465 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21
L:481 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:22
L:492 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22
L:509 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:23
L:519 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23
L:559 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:25
L:570 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25
L:587 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:26
L:591 M:283 W: Missing Blank Line separator, <220> field identifier
L:592 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:26
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VERIFICATION SUMMARY
PATENT APPLICATION: US/09/657,289A

DATE: 03/29/2001
TIME: 12:53:24

Input Set : **A:\Pto.amc**
Output Set: **N:\CRF3\03292001\I657289A.raw**

L:602 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26
L:603 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26

RAW SEQUENCE LISTING
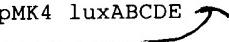PATENT APPLICATION: US/09/657,289A

DATE: 03/29/2001
TIME: 13:20:16

Input Set : A:\seqlist.txt
Output Set: N:\CRF3\03292001\I657289A.raw

Does Not Comply
Corrected Diskette Needed

```
   3 <110> APPLICANT: Francis, Kevin P.
   4        Contag, Pamela R.
   5        Joh, Danny J.
   7 <120> TITLE OF INVENTION: LUCIFERASE EXPRESSION CASSETTES AND METHODS OF USE
   9 <130> FILE REFERENCE: 9400-0006
  11 <140> CURRENT APPLICATION NUMBER: US/09/657,289A
  12 <141> CURRENT FILING DATE: 2000-09-07
  14 <160> NUMBER OF SEQ ID NOS: 26
  16 <170> SOFTWARE: PatentIn Ver. 2.0
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ERRORED SEQUENCES

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     175 <210> SEQ ID NO: 15
     176 <211> LENGTH: 645
     177 <212> TYPE: DNA
     178 <213> ORGANISM: Artificial Sequence
     180 <220> FEATURE:
     181 <223> OTHER INFORMATION: Description of Artificial Sequence: pMK4 luxABCDE
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     184        Sal
     184 <400> SEQUENCE: 15
E--> 185 atttatctaa agatgagatt aagccaatag aacgtcatta gcaaaataaa ttatattgcg 60
     186 tcctacaagc aagttcatgc ttatgtttgt agggggttat tgtggagaat aaaattattt 120
     187 ccaatagaga agggatggta atcattttat agtgaaatat tatgaaattg taataattta 180
     188 gatattgtaa aatctaataa gttgtaataa tttttaagggg taattataaa atttgatgat 240
     189 acagtatatg atttttttgt aatcataatg tcatcaaaca tcaacctatt atacataata 300
     190 aaatcgtata atgatgtagt attcataaat tcggataaaa gaatgttagg aaagttaagc 360
     191 aagaggagga ttttaaagtg caaaaaaag taattgcagc tattattggg acaagcgcga 420
     192 ttagcgctgt tgcggcaact caagcaaatg cggctacaac tcacacagta aaaccgggtg 480
     193 aatcagtgtg ggcaatttca aataagtatg ggatttcgat tgctaaatta aagtcattaa 540
     194 acaatttaac atctaatcta attttcccaa accaagtact aaaagtatct ggctcaagta 600
     195 attctacgag taatagtagc cgtccatcaa cgaactcagg tggcg              645
     197 <210> SEQ ID NO: 16
     198 <211> LENGTH: 671
     199 <212> TYPE: DNA
     200 <213> ORGANISM: Artificial Sequence
     202 <220> FEATURE:
W--> 203 <221> NAME/KEY: base_polymorphism
     204 <222> LOCATION: 26
     205 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
     206        position
     208 <220> FEATURE:
W--> 209 <221> NAME/KEY: base_polymorphism
     210 <222> LOCATION: 79
     211 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
     212        position
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RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/657,289A

DATE: 03/29/2001
TIME: 13:20:16

Input Set : A:\seqlist.txt
Output Set: N:\CRF3\03292001\I657289A.raw

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        214 <220> FEATURE:
        215 <223> OTHER INFORMATION: Description of Artificial Sequence: pMK4 luxABCDE
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        218        Sa2
        218 <400> SEQUENCE: 16
E--> 219 aaaaaatgag gggtgagacg tgaaantaaa gaaagataac gtagagaagc aatcagccac 60
W--> 220 caaattgata gcaatcccnt tcatcacaga ccatgaacta agcgacttat ttcaaagtga 120
        221 gtatacaaac aattcgttta gatcgcactt atttaaacat accagaatta agaagcgtat 180
        222 taaattagtt gctgaaaaga attatgacca aataagttct attgaagaac aagaatttat 240
        223 tggtgatttg attcaagtca atccaaatgt taaagcgcaa tcaattttag atattacatc 300
        224 ggattctgtt tttcataaaa ctggaattgc gcgtggtcat gtgctgtttg ctcaggcaaa 360
        225 ttcgttatgt gttgcgctaa ttaagcaacc aacagtttta actcatgaga gtagcattca 420
        226 atttattgaa aaagtaaaat taaatgatac ggtaagagca gaagcacgag ttgtaaatca 480
        227 aactgcaaaa cattattacg tcgaagtaaa gtcatatgtt aaacatacat tagttttcaa 540
        228 aggaaatttt aaaatgtttt atgataagcg aggataaaat tatggttaaa ttagcaattg 600
        229 atatgatggg tggcgacaat gcgcctgata tcgtattaga agccgtacaa aaggctgttg 660
        230 aagactttaa a                                                      671
        232 <210> SEQ ID NO: 17
        233 <211> LENGTH: 623
        234 <212> TYPE: DNA
        235 <213> ORGANISM: Artificial Sequence
        237 <220> FEATURE:
W--> 238 <221> NAME/KEY: base_polymorphism
        239 <222> LOCATION: 19
        240 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
        241        position
        243 <220> FEATURE:
W--> 244 <221> NAME/KEY: base_polymorphism
        245 <222> LOCATION: 32
        246 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
        247        position
        249 <220> FEATURE:
W--> 250 <221> NAME/KEY: base_polymorphism
        251 <222> LOCATION: 37
        252 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
        253        position
        255 <220> FEATURE:
W--> 256 <221> NAME/KEY: base_polymorphism
        257 <222> LOCATION: 48
        258 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
        259        position
        261 <220> FEATURE:
W--> 262 <221> NAME/KEY: base_polymorphism
        263 <222> LOCATION: 85
        264 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
        265        position
        267 <220> FEATURE:
W--> 268 <221> NAME/KEY: base_polymorphism
        269 <222> LOCATION: 103
```

```
      270 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
      271       position
W--> 272 <220> FEATURE:
W--> 273 <221> NAME/KEY: base_polymorphism
      274 <222> LOCATION: 154
      275 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
      276       position
W--> 278 <220> FEATURE:
      279 <223> OTHER INFORMATION: Description of Artificial Sequence: pMK4 luxABCDE
E--> 280       sa3
      282       Sa3
      282 <400> SEQUENCE: 17
E--> 283 gatgggtaag aagaaaatnc ggcatcaggg gncattngcc attcaggntg ggaactgttg 60
W--> 284 gaagggcgtc gggcggcctt ttcgntattc gcagctgcga aangggatgt gctgaaggcg 120
W--> 285 attaagttgg gtaacgccag ggtttcccag tcangcgttg taaacggcgg ccagtgaatt 180
      286 cccggggatc aagccgttta agtattacga ccagtttata tcattcatgg taaaggacag 240
      287 ggccttcaaa aaggtgtaca acaacatttg aaaagcataa agtgttagtg acttagaggt 300
      288 ggtatgccaa ggaaggtgga tttggcgtta ccgttgcaac actaaaataa attataattt 360
      289 gataaattaa atagctgcag ttaaaataat gtaaagcaac aagaatacat ttcaaacatg 420
      290 ttatttgaaa taagcataaa aattgagcaa atagaaatac atgaagcatg ttatctgata 480
      291 taatttgaac atcataataa taattaagga ggattggcat ttatggcaat cgtaaaagta 540
      292 acagatgcag attttgattc aaaagtagaa tctggtgtac aactagtaga ttttttgggca 600
      293 acatggtgtg gtccatgtaa aat                                    623
      295 <210> SEQ ID NO: 18
      296 <211> LENGTH: 671
      297 <212> TYPE: DNA
      298 <213> ORGANISM: Artificial Sequence
      300 <220> FEATURE:
W--> 301 <221> NAME/KEY: base_polymorphism
      302 <222> LOCATION: 249
      303 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
      304       position
      306 <220> FEATURE:
      307 <223> OTHER INFORMATION: Description of Artificial Sequence: pMK4 luxABCDE
E--> 308       sa4
      310       Sa4
      310 <400> SEQUENCE: 18
E--> 311 gatgtatatt cacggggcac atgctgccga aaagcatcac cattaggtgc aatgtcatta 60
      312 ctattgggac ggtttttata ttttattgct actcaaggtt ttgtaaatat gcaattaatc 120
      313 ggtgcgatta tctttgtatt aattacaggt cctcttttca agtcatatga ttatgaaagc 180
      314 agcatatataat attaaaacgc cttatactaa aaagactaaa gcgatgaaat ttcggaagac 240
W--> 315 ttaaaagcnc aaaattgtag attatataac aaaatcatga atataaatca acaacaaaca 300
      316 gcagtaagat gattccaaat taggaatgat tttactgctg ttttcttttg acattgttac 360
      317 ctcttttttca atgatttttt ctttgactac agattcgccc tatctacata tatctcttta 420
      318 atttaattgc ctttcatgtc gttatgtatt atgataataa taattataaa tcgtaacgat 480
      319 tacgttttaa aaagagagag gttttattat gcattggaca attatcggcg gtggcataca 540
      320 gggaactgca atcgcacaaa aactattatc aagcggatta acaacagacc gattaacaat 600
      321 cattgacccca cacgaaactt tttgccaaag gtttaactca tatacaaatc gaatagaaat 660
      322 gccttatttta a                                                671
```

```
       324 <210> SEQ ID NO: 19
       325 <211> LENGTH: 650
       326 <212> TYPE: DNA
       327 <213> ORGANISM: Artificial Sequence
       329 <220> FEATURE:
W-->   330 <221> NAME/KEY: base_polymorphism
       331 <222> LOCATION: 1
       332 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
       333       position
       335 <220> FEATURE:
W-->   336 <221> NAME/KEY: base_polymorphism
       337 <222> LOCATION: 7
       338 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
       339       position
       341 <220> FEATURE:
W-->   342 <221> NAME/KEY: base_polymorphism
       343 <222> LOCATION: 8
       344 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
       345       position
       347 <220> FEATURE:
W-->   348 <221> NAME/KEY: base_polymorphism
       349 <222> LOCATION: 34
       350 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
       351       position
       353 <220> FEATURE:
W-->   354 <221> NAME/KEY: base_polymorphism
       355 <222> LOCATION: 113
       356 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
       357       position
       359 <220> FEATURE:
W-->   360 <221> NAME/KEY: base_polymorphism
       361 <222> LOCATION: 118
       362 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
       363       position
       365 <220> FEATURE:
       366 <223> OTHER INFORMATION: Description of Artificial Sequence: pMK4 luxABCDE
E-->   367       sa5
       369       Sa5
       369 <400> SEQUENCE: 19
E-->   370 naccagnnaa aatggtaata aaaatggcag aagnaataaa aaaaggataa agagatccca 60
W-->   371 aacggtatag agcttagtat aaaattttcg gacaataaaa taaatacggg ttnaaccnaa 120
       372 ttttaacggg aaagcacttc agaatatggt gtgtttgatc aagaataaaa ttaatgatga 180
       373 aaatttaacg gagaatagtg tatattgagt agatcaagaa taaaaagata attctactat 240
       374 tgttgtgaag gcaaataagt agaagatttt aagtgtaatt tctggtgatt taaataataa 300
       375 tataaatgga agtactgata taaaactttt taacctacta gattcttata atttgctttc 360
       376 cattttatga cgatttttac tcaattgagt gatagaatca aaaaagccat ctcaaaaatt 420
       377 aatcaagcaa acaacattcc aaacaatgct cgcaaatcac caatgtatca ctctccaatt 480
       378 acgtaactat gatttaattt aagcatagtt attgaggttt tgtgatatat agtataaaat 540
       379 taatgagaat taaatttaat aatgtaaaat tcatcttcgg ggtcgggtgt aattcccaac 600
```

```
    380 cggcagtaaa taaagcctgc gacctgctag tatgtatcat attagtggct          650
    382 <210> SEQ ID NO: 20
    383 <211> LENGTH: 677
    384 <212> TYPE: DNA
    385 <213> ORGANISM: Artificial Sequence
    387 <220> FEATURE:
W-->388 <221> NAME/KEY: base_polymorphism
    389 <222> LOCATION: 19
    390 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
    391       position
    393 <220> FEATURE:
W-->394 <221> NAME/KEY: base_polymorphism
    395 <222> LOCATION: 66
    396 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
    397       position
    399 <220> FEATURE:
W-->400 <221> NAME/KEY: base_polymorphism
    401 <222> LOCATION: 97
    402 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
    403       position
    405 <220> FEATURE:
W-->406 <221> NAME/KEY: base_polymorphism
    407 <222> LOCATION: 99
    408 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
    409       position
    411 <220> FEATURE:
W-->412 <221> NAME/KEY: base_polymorphism
    413 <222> LOCATION: 119
    414 <223> OTHER INFORMATION: /note = "'n' represents an a or g or t or c polymorphism at this
    415       position
    417 <220> FEATURE:
    418 <223> OTHER INFORMATION: Description of Artificial Sequence: pMK4 luxABCDE
E-->419       sa6
    421       Sa6
    421 <400> SEQUENCE: 20
E-->422 cggaagaacg ctttgaagnt taagctaatt acatctcatc atatgcacgg agatccttaa 60
W-->423 atgccnaatt gaaagatatt tatatgaatc atcgagncng tcttgatgta gctattgcna 120
    424 gcagatgata tttgtccagc aataactaat ggggaacaag tgaaaggcct ttacctttat 180
    425 ggtccatttg ggcaggtaaa tcttttattc taggtgcaat tgcggaatca gctcaaatct 240
    426 aagaaggtac gttcgacaat tatttattta ccgggaattt attagaacat taaaaggtgg 300
    427 ctttaaagat ggttcttttg aaaagaaatt acatcgcgta agagaagcaa acattttaat 360
    428 gcttgatgat attggggctg aagaagtgac tccatgggtg agagatgagg taattggacc 420
    429 tttgctacat tatcgaatgg ttcatgaatt accaacattc tttagttcta attttgacta 480
    430 tagtgaattg gaacatcatt tagcgatgac tcgtgatggt gaagagaaga ctaaagcagc 540
    431 acgtattatt gaacgtgtca aatctttgtc aacaccatac tttttatcag gagaaaattt 600
    432 cagaaacaat tgaattttaa aatgattggt gtataatgaa tacaaatcta aatcgtttaa 660
    433 atgattgaag acaagat                                                 677
```

VERIFICATION SUMMARY　　　　　DATE: 03/29/2001
PATENT APPLICATION:　US/09/657,289A　　TIME: 13:20:17

Input Set : **A:\seqlist.txt**
Output Set: **N:\CRF3\03292001\I657289A.raw**

```
L:182 M:254 E: No. of Bases conflict, LENGTH:Input:1 Counted:2 SEQ:15
L:182 M:112 C: (48) String data converted to lower case,
L:182 M:252 E: No. of Seq. differs, <211>LENGTH:Input:645 Found:2 SEQ:15
L:203 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:16
L:209 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:16
L:216 M:112 C: (48) String data converted to lower case,
L:216 M:252 E: No. of Seq. differs, <211>LENGTH:Input:671 Found:2 SEQ:16
L:219 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:0
L:220 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:0
L:238 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:17
L:244 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:17
L:250 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:17
L:256 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:17
L:262 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:17
L:268 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:17
L:272 M:283 W: Missing Blank Line separator, <220> field identifier
L:273 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:17
L:280 M:254 E: No. of Bases conflict, LENGTH:Input:3 Counted:2 SEQ:17
M:112 Repeated in SeqNo=17
L:280 M:252 E: No. of Seq. differs, <211>LENGTH:Input:623 Found:2 SEQ:17
L:283 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:0
L:284 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:0
L:285 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:0
L:301 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:18
L:308 M:254 E: No. of Bases conflict, LENGTH:Input:4 Counted:2 SEQ:18
M:112 Repeated in SeqNo=18
L:308 M:252 E: No. of Seq. differs, <211>LENGTH:Input:671 Found:2 SEQ:18
L:315 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:0
L:330 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:19
L:336 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:19
L:342 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:19
L:348 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:19
L:354 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:19
L:360 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:19
L:367 M:254 E: No. of Bases conflict, LENGTH:Input:5 Counted:2 SEQ:19
M:112 Repeated in SeqNo=19
L:367 M:252 E: No. of Seq. differs, <211>LENGTH:Input:650 Found:2 SEQ:19
L:370 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:0
L:371 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:0
L:388 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:20
L:394 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:20
L:400 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:20
L:406 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:20
L:412 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:20
L:419 M:254 E: No. of Bases conflict, LENGTH:Input:6 Counted:2 SEQ:20
M:112 Repeated in SeqNo=20
L:419 M:252 E: No. of Seq. differs, <211>LENGTH:Input:677 Found:2 SEQ:20
L:422 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:0
```

VERIFICATION SUMMARY
PATENT APPLICATION: US/09/657,289A

DATE: 03/29/2001
TIME: 13:20:17

Input Set : **A:\seqlist.txt**
Output Set: **N:\CRF3\03292001\I657289A.raw**

```
L:423 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:0
L:441 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:21
L:447 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:21
L:453 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:21
L:459 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:21
L:469 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21
L:470 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21
L:471 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21
L:487 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:22
L:498 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22
L:515 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:23
L:525 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23
L:565 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:25
L:576 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25
L:593 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:26
L:597 M:283 W: Missing Blank Line separator, <220> field identifier
L:598 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:26
L:608 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26
L:609 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26
```